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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/735,595

12/12/2003

Raymond C. Kurzweil

14202-005001

1751

26161 7590 03/05/2009

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EXAMINER

DUFFY, DAVID W

ART UNIT

PAPER NUMBER

3714

NOTIFICATION DATE

DELIVERY MODE

03/05/2009

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PATDOCTC@fr.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/735,595	<b>Applicant(s)</b> KURZWEIL, RAYMOND C.	
	<b>Examiner</b> DAVID DUFFY	<b>Art Unit</b> 3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Status of Claims***

1. This office action is in response to the amendment filed 01/22/2009 in which applicant amends claim 9. Claims 1-25 are pending.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 25 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claim recites the limitation "wherein the mannequin is a humanoid robot having the first body suit with tactile sensors and actuators." Examiner was unable to find any instance in the disclosure of the robot or mannequin wearing a body suit.

### ***Claim Rejections - 35 USC § 103***

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1, 12, 14, 18 and 20-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Choy et al. (US 6695770) in view of Yee et al. (US 6016385).

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6. In regards to claims 1 and 14, Choy discloses a virtual reality encounter system comprising: a mannequin coupled to a computer system wherein the mannequin is fitted with appropriate sensors that are connected to the computer system to transmit to another location and user device over a network (3:23-25), a headset, to display morphing animations and animated textures on the appropriate avatar (1:63 and 9:65-10:6) and a processor that overlays a virtual environment over one or more portions of a video image to form a virtual scene (8:47-58 and 9:65-10:6). Choy lacks explicitly stating the use of a camera supported by the mannequin.

7. In related prior art, Yee discloses a robot system wherein an operator controls the robot and receives sensory information from the robot, including a pair of cameras corresponding to the remote user's eyes coupled to the robot for receiving a video image where the cameras send the video images via a communication network to the user (5:11-37). One skilled in the art would recognize the advantages of providing video signals to a remote user in order to provide a visual connection for the users.

8. Therefore it would have been obvious to one skilled in the art at the time to combine the camera configuration of Yee with the two person configuration of Choy to provide a more realistic experience to both remote users in a networked environment.

9. In regards to claims 12 and 22, Choy discloses a headset that communicates through a wireless link inherently including a receiver (3:41-46).

10. In regards to claims 18, 20, 21 and 23 Choy discloses that the robot has life-like features, the robot comprising: a body (fig 2). Choy further discloses that the system employs a headset with stereo audio and a wireless connection (3:41-46). Choy lacks

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disclosing a microphone attached to the robot located in ear canals or cameras located in eye sockets.

11. In related prior art, Yee discloses teaches a robot having life-like features including a body (fig 3), and a microphone coupled to the body, wherein the body includes an ear canal and the microphone is positioned within the ear canal (4:52-5:1) and the body includes an eye socket and the camera is positioned in the eye socket (5:11-37) and the command and sense signals between the robot and the user may be over wireless connection (9:9-11). One skilled in the art would recognize the advantages of replicating human perception for a remote controlled robot.

12. Therefore it would have been obvious to one skilled in the art at the time to combine the virtual reality system of Choy with the teachings of Yee because as Yee suggests, the virtual interface of the robot, camera in eye socket and microphone in ears, is intended to make the robot more friendly in appearance to a second user, and the microphones in the ears add the benefit of being able to relay to the user a sense of direction of a sound and the cameras in the left and right eye sockets provide the user with information in a three dimensional format similar to how a human would normally view an environment (4:52-5:49).

13. Claims 2-6, 10, 11, 13 and 15-17 rejected under 35 U.S.C. 103(a) as being unpatentable over Choy in view of Yee as applied to claim 1 above, and further in view of Dundon (US 7046151).

14. In regards to claims 2 and 15, Choy discloses wherein the mannequin is a humanoid robot having tactile sensors positioned along the exterior of the robot (2:4-

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32); the sensors sending tactile signals to a communications network (8:9-15). Choy further discloses wherein the user wears gloves with vibrotactile stimulators, or actuators, receiving data from the system (6:50-67), but does not explicitly disclose a body suit.

15. In related prior art, Dundon discloses an interactive body suit that permits users to interact over a network whereby the garment includes tactile actuators, the tactile actuators receiving tactile signals from the network (abstract). One skilled in the art would recognize the advantages of recreating tactile feelings over the entire body when participating in virtual congress.

16. Therefore it would have been obvious to one skilled in the art at the time to combine the body suit of Dundon with the system of Choy because, as Dundon suggests (29:36-55), an interactive body suit that covers a user with embedded oscillating motors provides a more realistic and interactive sensory environment when providing force feedback sense of touch and would further the stated goal of Choy (6:65-67) to enable the users to feel the virtual partners.

17. In regards to claims 3 and 16, Choy discloses motion sensors positioned throughout the body suit (5:46-67), the motion sensors sending motion signals corresponding to movements of each sensor relative to a reference point 0, the motion signals transmitted to the communications network (5:46-67); and a humanoid robot, receiving, from the communications network, the motion signals from the motion sensors (9:65-10:32), the motion signals from the motion sensors causing a movement

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of the robot that is correlated to a movement of the body suit (3:11-25, 6:1-49 and 7:20-23).

18. In regards to claims 4 and 17, Choy discloses that the robot includes motion actuators corresponding to the motion sensors, the motion actuators causing the robot to move (7:20-23 and 8:1-15).

19. In regards to claims 5, 6, 10, 11 and 13 Choy discloses that the robot has life-like features, the robot comprising: a body (fig 2). Choy further discloses that the system employs a headset with stereo audio and a wireless connection (3:41-46). Choy lacks disclosing a microphone attached to the robot located in ear canals or cameras located in eye sockets.

20. In related prior art, Yee discloses teaches a robot having life-like features including a body (fig 3), and a microphone coupled to the body, wherein the body includes an ear canal and the microphone is positioned within the ear canal (4:52-5:1) and the body includes an eye socket and the camera is positioned in the eye socket (5:11-37) and the command and sense signals between the robot and the user may be over wireless connection (9:9-11). One skilled in the art would recognize the advantages of replicating human perception for a remote controlled robot.

21. Therefore it would have been obvious to one skilled in the art at the time to combine the virtual reality system of Choy with the teachings of Yee because as Yee suggests, the virtual interface of the robot, camera in eye socket and microphone in ears, is intended to make the robot more friendly in appearance to a second user, and the microphones in the ears add the benefit of being able to relay to the user a sense of

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direction of a sound and the cameras in the left and right eye sockets provide the user with information in a three dimensional format similar to how a human would normally view an environment (4:52-5:49).

22. Claims 7, 8, 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Choy in view of Yee and Dundon as applied to claim 6 above, and further in view of Abbasi (US 6786863).

23. In regards to claims 7 and 9, Choy in view of Yee discloses a robot at a first location and a set of goggles at a second location (Choy: 9:65-11:17); a second humanoid robot in the second location having life-like features and rendering acquired video and audio signals received from a communications network into a user headset (Choy: 9:65-11:17). Choy further discloses sending audio and visual signals to the headset of the user (fig 1 and 3:10-4:55). The combination lacks explicitly disclosing sending audio and video signals from a second microphone and camera coupled to a second robot.

24. In related prior art, Abbasi discloses a remote physical encounter system and method comprising a second mechanical surrogate with external sensory devices including a second camera and a second microphone and sending the signals to a communications network (fig 1) wherein the communications network comprises an interface having one or more channels for receiving the audio signals from the microphone and receiving the video signals from the camera (fig 1). One skilled in the art would recognize the advantages of including a microphone and camera when two people are interacting remotely.



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25. Therefore it would have been obvious to one skilled in the art at the time to combine the system of Choy with the teachings of Abbasi because the use of sight and sound is important for easy communication and as Choy suggests, the combination of touch, audio and visual stimulation is a powerful and effective means of communication (1:19-22).

26. In regards to claim 8, Choy discloses the communications network includes a first communication gateway in the first location and a second communication gateway in the second location (9:65-10:6), the second processor connected to the first processor via a network (7:64-8:38 and 11:1-12).

27. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Choy in view of Yee as applied to claim 18 above, and further in view of Abbasi.

28. Choy in view of Yee discloses a robot at a first location and a set of goggles at a second location (Choy: 9:65-11:17); a second humanoid robot in the second location having life-like features and rendering acquired video and audio signals received from a communications network into a user headset (Choy: 9:65-11:17). Choy further discloses sending audio and visual signals to the headset of the user (fig 1 and 3:10-4:55). The combination lacks explicitly disclosing sending audio and video signals from a second microphone and camera coupled to a second robot.

29. In related prior art, Abbasi discloses a remote physical encounter system and method comprising a second mechanical surrogate with external sensory devices including a second camera and a second microphone and sending the signals to a communications network (fig 1) wherein the communications network comprises an

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interface having one or more channels for receiving the audio signals from the microphone and receiving the video signals from the camera (fig 1). One skilled in the art would recognize the advantages of including a microphone and camera when two people are interacting remotely.

30. Therefore it would have been obvious to one skilled in the art at the time to combine the system of Choy with the teachings of Abbasi because the use of sight and sound is important for easy communication and as Choy suggests, the combination of touch, audio and visual stimulation is a powerful and effective means of communication (1:19-22).

31. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choy et al. (US 6695770) in view of Dundon (US 7046151) and Abbasi (US 6786863).

32. In regards to claim 24, Choy discloses a mannequin coupled to a computer system wherein the mannequin is fitted with appropriate sensors that are connected to the computer system to transmit to another location and user device over a network (3:23-25) and a body suit with motion sensors and gloves with vibrotactile stimulators, or actuators, receiving data from the system (5:1-6:67), motion sensors positioned throughout the body suit sending motion signals corresponding to movements to a communications network (5:46-67), and a set of goggles for displaying images from the system (3:41-4:55). Choy does not explicitly disclose a first and second camera on a first and second mannequin.

33. In related prior art, Abbasi discloses a remote physical encounter system and method comprising a second mechanical surrogate with external sensory devices

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including a second camera and a second microphone and sending the signals to a communications network (fig 1) wherein the communications network comprises an interface having one or more channels for receiving the audio signals from the microphone and receiving the video signals from the camera (fig 1). One skilled in the art would recognize the advantages of including a microphone and camera when two people are interacting remotely.

34. Therefore it would have been obvious to one skilled in the art at the time to combine the system of Choy with the teachings of Abbasi because the use of sight and sound is important for easy communication and as Choy suggests, the combination of touch, audio and visual stimulation is a powerful and effective means of communication (1:19-22). The combination made does not explicitly disclose motion actuators disposed over the body suit.

35. In related prior art, Dundon discloses an interactive body suit that permits users to interact over a network whereby the garment includes tactile actuators, the tactile actuators receiving tactile signals from the network (abstract). One skilled in the art would recognize the advantages of recreating tactile feelings over the entire body when participating in virtual congress.

36. Therefore it would have been obvious to one skilled in the art at the time to combine the body suit of Dundon with the system of Choy because, as Dundon suggests (29:36-55), an interactive body suit that covers a user with embedded oscillating motors provides a more realistic and interactive sensory environment when

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providing force feedback sense of touch and would further the stated goal of Choy (6:65-67) to enable the users to feel the virtual partners.

37. In regards to claim 25, Choy discloses the mannequin is a humanoid robot with tactile sensors (2:4-32) and tactile actuators (3:11-25, 6:1-49 and 7:20-23), but does not explicitly state that the sensors and actuators are in a body suit on the robot.

38. In related prior art, Dundon discloses an interactive body suit that permits users to interact over a network whereby the garment includes tactile actuators, the tactile actuators receiving tactile signals from the network (abstract). One skilled in the art would recognize the advantages of a removable body suit to contain the sensors to ease repair or replacement.

39. Therefore it would have been obvious to one skilled in the art at the time to use a body suit to hold the sensors to ease repair and replacement of the sensors and actuators over the internally mounted equipment of Choy.

### ***Response to Arguments***

40. Applicant's arguments filed 01/22/2009 have been fully considered but they are not persuasive. Applicant argues that Choy does not contain motivation for using cameras to obtain video of the other partner in the two user scenario. While examiner agrees and has previously stated that Choy does not explicitly disclose cameras, KSR forecloses the argument that a *specific* teaching, suggestion, or motivation is required to support a finding of obviousness. See *Ex parte Smith*, --USPQ2d--, slip op. at 20, (Bd. Pat. App. & Interf. June 25, 2007) (citing *KSR*, 82 USPQ2d at 1396). Applicant additionally argues that the motivation must be found in the prior art and not in the

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teachings of the specification. The teachings of Choy are of a remote congress system and examiner contends that when engaging in remote congress, it would be obvious that the participants may wish to see each other's images. See, for instance, previously cited Sandvick; Warren J. et al. US 6368268 B1 (3:21-26) which is cited as evidence but not relied upon.

41. Applicant argues that modifying Choy to incorporate a camera would require a substantial reconstruction and redesign of the elements shown as well as a change in the basic principle under which the construction of Choy was designed to operate. Examiner respectfully disagrees. Choy already discloses the abilities to handle video data in the creation of images for the system (8:53-58). Additionally, while Choy is directed to a polygonal system, it is attempting to achieve a high degree of realism (3:16-21, 31-34, 10:52-53, etc), and as such, real images would be ideal to provide the texture mapped to the polygons of the avatars as is well understood in the art of computer graphics. Thus, the system of Choy in view of Yee teaches a virtual scene with video data and a virtual environment as set forth in the claims.

42. Applicant argues that nothing in Choy describes or suggests using a microphone to promote a more realistic interaction. Examiner disagrees. As stated explicitly in Choy, sound is important for creating realism (3:31). One of ordinary skill in the art would have readily understood that when engaging in the two person configuration of Choy some sound input would be required in order to determine what the two parties were vocalizing and a microphone as taught by Abbasi would be the most desirable so

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that the actual sounds could be used thereby achieving the stated goal of Choy of having realistic sound.

### ***Conclusion***

43. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID DUFFY whose telephone number is (571) 272-1574. The examiner can normally be reached on M-F 0830-1700.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on (571) 272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. D./  
Examiner, Art Unit 3714

/Corbett Coburn/  
Primary Examiner  
AU 3714